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ABSTRACT

The State Educational Needs Assessment Project (SENAP) conducted in Arizona had the following puposes: (1) to investigate and identify critical educational needs in Arizona in both cognitive and affective domains and in the psychomotor areas; (2) to develop or modify a model for needs assessment which would encompass selection and codification of existing data, development of dialogue, including varied populations of Arizona, and assembly of information reflecting State Department of Public Instruction educational activities relative to the state's educational needs; and (3) to provide for evaluation of the model. This volume is comprised of six sections that contain the major elements of the report as well as a summary, conclusions, and recommendations. The six sections are as follows: I. Background for the Project, II. Methods and Procedures in SENAP, III. The Model, IV. Activities Resulting from Use of the Preliminary Model, V. The Findings, and VI. Summary, Conclusions and Recommendations. (For related document, see TM 003 139.) (DB)

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BUREAU OF EDUCATIONAL RESEARCH AND SERVICES

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Report of the State Educational Needs Assessment Project of Arizona

August, 1970

VOLUME I

Dr. G. D. McGrath, Project Coordinator

Published by the Bureau of Educational Research and Services

Dr. R. Merwin Deever, Director

College of Education

Arizona State University

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FOREWORD

The Bureau of Educational Research and Services of Arizona State University is pleased to submit this report of the assessment of educational need in Arizona. It presents information, analyses and recommendations which should prove helpful and useful. It is our hope that leadership in the State Department of Education can plan many worthwhile projects referred to in this report which will bring equitable education of the highest quality to the people of Arizona.

The Bureau has had a major role in more than 100 exciting projects of educational nature in Arizona. In most instances, the strengths and weaknesses of educational practices were carefully assessed. The considered judgements of a host of specialists and consultants were brought to bear on the problems under study. So, too, in this project, a very large number of individuals with great capabilities in the educational world were active participants. In addition, a segment of the citizenry not directly related to the educational program was consulted for opinions and reactions.

It is the hope of members of the Bureau staff that this is the beginning of a continuous long-range program of assessment of educational need which will provide the stimulation, the direction and the method-procedure for great advancement in quality of education. The Bureau pledges its constant concern, its cooperation and its assistance in team work with the State Department of Education as educational problems or needs are attacked.

Respectfully submitted,

R. Merwin Deever, Director
Bureau of Educational Research
and Services

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Much credit should go to the many individuals who participated in this project. Their contributions and assistance are gratefully acknowledged. A special note of appreciation is given the staff-team, the consultants, and those from the State Department of Education, all of whom were most helpful. In addition, many coordinators of Title III throughout the nation, a large number of public school personnel and professors of education contributed in a large measure to this document. Scholars in the field of measurement, members of this project advisory councils and members of the State Advisory Council to Title III were of great assistance. Mr. Joe Smith, Mr. John Tanner and Dr. George H. Smith were most helpful throughout the time they were related to Title III activities. Finally, a collective note of gratitude is extended to all others who assisted, especially lay citizenry and graduate students in education. There was magnificent cooperation all along the way from all who were involved. Their dedication toward helping, wherever possible, to take a step forward for provision for the best possible educational opportunity for all youth in Arizona, is most commendable.

G. D. McGrath
Coordinator of the Project

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INTRODUCTION

Education is Arizona's most important business. The most significant asset of the state is its youth. Arizona was regarded as the newest state for so long, until Hawaii and Alaska were admitted to the Union, that there was a tendency to excuse the lack of solution to a myriad number of problems on the basis that it was so new. In other words, Arizona has not yet come to grips with many critical educational problems which have had envisioned attention in the Mid-west for a quarter of a century or more.

Unquestionably, a good approach toward finding solutions to educational problems or needs is via needs assessment projects. These assessment approaches must be, of necessity, long-range, continuous and adaptable, if they are to be successful. This project represents a start in this direction. Hopefully it is but the first step in a series of projects which will help raise Arizona's educational sights each year during the foreseeable future.

This project was authorized by the State Board of Education after careful consideration of the need for such a study by personnel of the, then, State Department of Public Instruction and the members of the State Advisory Council to Title III, ESEA.

A tremendous amount of information and material was amassed during this project. An effort has been made

to keep the coverage of this document to modest scope. Thus, much pertinent material has been deleted from the report. There is minor overlap or duplication wherever the replication is needed for interpretation or clarification.

This report is presented in two parts: Volume I and Volume II. Volume I contains six sections containing the major elements of the report as well as summary, conclusions and recommendations. Volume II contains supplementary information, arranged as the appendix sections referred to in Volume I. All of the appendix material is considered important as a frame of reference to that which is included in Volume I.

SECTION I. BACKGROUND FOR THE PROJECT

Introduction

Section I has been organized into a series of topics designed to develop an understanding of what a state educational needs assessment project is all about, a rationale for attacking the problem, and an attempt to acquaint the reader with the multi-faceted approach to a very complex problem.

Emergence of the Assessment Concept

During the past three decades, and, especially, in the period from 1960 to 1969, there has been a tendency to use "fad" words to characterize emphases in American Public Education. In some instances, there was an "in" word or expression for each year. For example, such words or expressions as relevant, viable, innovative and change agent have each had a period of heavy usage which lasted approximately one year. However, early in 1969, a word that carried more impact, and which has lasted longer than many others came into abundant usage. This key word was accountability. One of the stickiest problems in education has always been the problem of fixing responsibility. Among the causes of this difficulty is the real hang-up in measuring pupil achievement, especially in schools which emphasize diversity for meeting individual differences. Much controversy exists with respect to the

feasibility and capability of measuring pupil achievement, and it has been apparent that complete agreement on how to proceed in this important realm of activity will probably never be achieved.

If the public is to consider fully the problem of designating responsibility in education, it follows, directly that it must provide continuously for broad-scoped assessment of what has transpired in learning activities. Adequate assessment can provide at least two specific avenues for study:

1. A panorama of progress and accomplishment.
2. A picture of educational needs which exist.

The concept of assessment of educational need is of major importance in setting the stage for accountability. Much has been written and many discussions about the nature of assessment have taken place. In spite of the difficulties encountered, a national assessment of educational achievement is underway, and expansion of the program is planned. The effort in national assessment has been well-organized, and there has been much input from highly competent individuals. It, thus, will undoubtedly bring forth results which will be very helpful in determining accountability. However, it may be several years before extensive data will be available from this source. Thus, again there is great need for on-going assessment studies.

Additional evidence of concern about American Public Education appears in the increased activity to strengthen instruments for evaluating schools. Several publications which include evaluative criteria have come forth after considerable refinement and up-dating. Some of these are listed in the working bibliography or reference list in Volume II of this report. These have been studied carefully as a preliminary activity in the preparation for this project.

Impact of Title III, ESEA

Of major significance in the field of assessment of educational need is the stimulation and thrust of Title III, ESEA. A specific requirement in each state plan is mandated for a comprehensive assessment of educational needs in the state. Thus, all of the states are engaged in a heavy effort to set into motion a major operation of assessment of educational need. Assessment is necessary before realistic goals for innovative programs to meet crucial needs can be set. Each state has franchise to develop its own format and procedures, and no probability of a sterile sterotype is observable. Rather, each state is committed to give its best effort in the assessment of educational need, irrespective of how other states attack the problem.

Developments in Arizona

Several important developments in the direction of educational needs assessment have occurred in Arizona.

Despite this, as in other states, much remains to be done. Generally speaking, the efforts in Arizona might well be alluded to as stages. It could be asserted that there are three specific stages completed or comtemplated, with the hope that there will be an additional stage, for each of the next 10 or 15 years or more: and yet there is some reason to feel that none of the stages will ever be truly completed, and that efforts will constantly be made to retrive something of value from an earlier stage. It follows directly that, by design, there are not hard and fast lines of demarcation between various stages. Rather there has been and will continue to be a degree of inter-play between stages, making for easier transition from one to another. Also, there has not been an exact time limit for any one stage, or any specific target date for completion. Instead, every intent has been to go as far as possible on each aspect or task of each stage, as long as there were rewarding dividends. There have been simultaneous inputs in two different stages at times along the way. Thus, although not officially designated as such, it has been helpful to refer to sequences of time and activity as stages. Each stage will probably last approximately one year after the earlier trial stages are completed.

Stage I covered the period from July 1, 1968, through June 30, 1969. Stage II was scheduled from July 1, 1969, through August 31, 1970. It is anticipated that Stage III might run from September 1, 1970, through June 30, 1971.

The first major effort of Stage I was the Arizona Assessment of Needs Survey, released under date of March 19, 1969, under the direction of Dr. Fred L. Bedford. (See Appendix A for copy). This instrument went to superintendents, principals and teachers with the express purpose of developing information which would meet the requirements of Title III, ESEA, and which would yield information which might help educators in Arizona ascertain objectives and establish priorities for the schools in the years ahead. This project was well designed and comprehensive in nature. It provided an abundance of information on educational needs in Arizona as visualized by educators.

The most important data from the 1969 study were summarized in a document entitled, "Critical Educational Needs in Arizona," issued in May of 1969. (See Appendix B). In this release, the educational needs indicated in the study concluded in April, 1969, are reported. The report covered three areas of assessment: (1) programs, services, and activities currently in existence in Arizona schools, (2) results of critical educational needs, and (3) the opinion of the sub-groups. Although the critical needs listed appear almost overwhelming in nature, the study has served a most useful purpose in focusing attention on Arizona's educational problems.

All of the information produced in the 1969 studies referred to in the foregoing paragraphs was carefully studied and analyzed as a springboard for Stage II, or, in order to detect any spin-off segments which should be reinforced.

A second preliminary step was taken in preparation for Stage II. For several years, Arizona was engaged, along with seven other states, in a major project entitled, "Designing Education for the Future." Particularly, the published documents of this project were assayed for any possible contribution toward assessment of educational needs in Arizona. Five books and three pamphlets from several published by the Designing Education for the Future project were carefully analyzed for use in this program of assessment. The chief titles of help were these: (See listing in reference list section)

1. PROSPECTIVE CHANGES IN SOCIETY BY 1980
2. IMPLICATIONS FOR EDUCATION OF PROSPECTIVE CHANGES IN SOCIETY
3. PLANNING AND EFFECTING NEEDED CHANGES IN EDUCATION
4. THE SCOPE AND QUALITY OF OUR PUBLIC SCHOOLS
5. EMERGING DESIGNS FOR EDUCATION
6. REPORT OF RECOMMENDATIONS

As a next step in the development in Arizona, careful scrutiny was given all of the documents obtainable which related to guidelines and materials submitted as a part of state plans which had reference to assessment of educational need. From the contents of these publications, a working matrix was developed for an attack on assessment of Arizona's educational needs.

Under the numerical index of 2.3.1, all needs assessment materials in all Arizona state plans submitted to date were analyzed, as well as all pertinent replies or evaluations from the Title III ESEA office in Washington.

This with all that could be ascertained from the guidelines, formed a backdrop and a sense of direction for launching Stage II.

Developing a Proposal and Agreement

In February of 1969, several conferences with the Coordinator of Title III, the staff of the Bureau of Educational Research and Services of A.S.U., and some members of the State Advisory Council to Title III were held which were aimed at taking a big step toward an objective assessment of educational needs in Arizona. A pre-proposal was drawn up for discussion with the State Superintendent of Public Instruction and the State Board of Education (see appendix C). After considerable reconstruction and re-study, a memorandum of agreement was made on June 27, 1969, which officially launched a period informally referred to as Stage II. (See Appendix D.)

The project was tentatively called, "State Educational Needs Assessment Project," hereinafter referred to as SENAP. The salient features of SENAP provided for the following:

1. To investigate and identify critical educational needs in Arizona in both cognitive and affective domains and in pychomotor areas.

2. To develop or modify a model for needs assessment which would encompass selection and codification of existing data, development of dialogue, including varied populations of

Arizona, and assembly of information reflecting State Department of Public Instruction educational activities relative to the state's educational needs.

3. To provide for evaluation of the model.

The underlying intent was to set the stage for a long-range process to identify critical educational needs, to stimulate development of some special programs to meet some of those needs, and to encourage greater participation in meeting educational needs by the State Department of Education, the legislature, Federal agencies, school boards, school personnel, professional membership groups, the general adult citizenry and students.

A furthur interpretation of the agreement, with respect to responsibilities or objectives, suggests or emphasizes the following important considerations:

"This contract deals with the first phase of a comprehensive appraisal of Arizona educational needs and the specific areas include the following:

The model will be developed for assessing educational needs and codifying the data in a usable form as a basis for curriculum development and program modifications.

This model will serve the purpose of providing data for ongoing and periodic assessment of Arizona educational needs.

The model will be tested and refined using the procedure indicated below.

Areas of critical educational needs in Arizona will be identified. From the critical educational needs in Arizona identified above one or more of the major areas of educational needs will be assessed using available data from the State Department and local school districts. This assessment will provide information for program implications and for the refinement of the model.

The concepts of self-correcting factor should apply in the model development, priority determination, and assessment of respective critical educational needs.

The application of the model will include more specifically, four classifications: (1) data collection and codification, (2) dialogue development, (3) assembly of educational activities correlation information, and (4) evaluation of the model and of the application of the model. (Approximately 7.5% of the contract will be applied to evaluation.)

The Bureau of Educational Research and Services, Arizona State University, as primary contractor, will be responsible for the direction of the project and coordination of all consultants and other resources incident thereto.

Resources of the State Department of Public Instruction, Arizona State University, Northern Arizona University, and The University of Arizona will be united in cooperatively assessing the educational needs within Arizona public schools."

Concurrently with the launching of Stage II, but not as part of SENAP, the State Advisory Council to Title III recommended completion of a contract for an assessment of the educational needs of Indian students in the State of Arizona. This contract called for a unique approach on assessment of need and was prepared especially for the Title III ESEA State Advisory Council. In its noteworthy report under date of December, 1969, a number of significant recommendations were made. All of these were taken into account as supplementary material in this SENAP report.

Also studied in detail was a report containing suggestions for improvement of Arizona's assessment of educational need, from the Title III Office in Washington,

D. C. This was primarily helpful in focusing on general inadequacies of previous State Plan provisions for assessment of educational need, with specific indications of areas which should be strengthened.

It should be re-emphasized at this point that some activity is virtually continuous in parts of each of three stages. This is to say, that while the major focus of this report is on Stage II, there are occasional efforts referring to Stage I and some preliminary planning for Stage III going on simultaneously.

Development of a Philosophical Basis for Assessment of Need

Early in an attack on assessing educational needs, it is apparent that a rationale for needs assessment must be established. This means that a clear and emphatic focus on defensible educational outcomes must be made. Needs assessment, then, should carry freight in delineating unmistakably those areas of educational deficiency most logical for amelioration. Thus, educational needs assessment becomes a process or technique for identifying educational objectives which stand in highest priority for accomplishment in the total learning situation. In a simple equation, the desired learner outcome minus the current learner status equals an educational need. It should be relatively easy to identify a large number of needs, inasmuch as our society demands so much from its

schools. A major diffculty arises in establishing priority or in ranking the needs so that major attack can be directed toward the most important ones.

To be sure, there are many needs and many desirable outcomes which go beyond so-called intellectual achievements. It, thus, becomes imperative for all of those working in the needs assessment arena to identify needs in all three recognized domains of learner behavior. Moreover, it is important to establish some scope or limitations for each of these domains. In this consideration, cognitive refers primarily to the purely intellectual types of learning, while affective pertains to attitudinal, valuational or emotional types of outcomes. Psychomotor needs are associated with a learner's physical and motor skills.

Obviously, there is a tremendous challenge in implementing a needs assessment in the three domains. The big task rests with deciding what the public wants the educational product to be like. Educators should be able to say to the supporting public, "We'll provide these experiences and your children should emerge with these capabilities. Is this what you want?"

In any event, it becomes necessary to spell out the educational goals to be established. Almost with equal difficulty, is the problem of ascertaining where the learner is when schools start with him, in terms of desired educational outcomes. In the thinking of many,

educators have relied far too heavily on achievement test scores to tell this story. If it were possible to come up with defensible means of deciding the educational status of the learner, there would yet remain the requirement of subtracting this from a theoretical level of where the public wants him to be, in order to indicate an educational need. One of the popular approaches in attacking the aforementioned problem is to attempt to develop or select instructional objectives stated in behavioral terms and measurable with reasonable reliability and validity. Unquestionably, teachers need much assistance in selecting or constructing the objectives as well as in developing criterion-referenced measuring devices which would indicate the degree of realization of the objective. In fact, there is much agreement on the point that a prime prerequisite for improvement in the classroom is to shift toward establishment of behaviorally stated objectives in nearly all learning activities.

SECTION II. METHODS AND PROCEDURES IN SENAP

Introduction

Very near the outset of starting on SENAP, a model consisting of 44 items was drawn up as a tentative procedure. A PERT (Program Evaluation and Review Technique) was constructed to go with this as a visual means for a systems flow chart. The intent was to get started as soon as feasible, to go as far down the road on each item as possible, and to break down each item into its logical components with a time allotment for completion. All of this was accomplished during the first two weeks of activity on the project. There was full intent to test this model, to refine it, to coalesce steps and to provide a more functional guideline. It became evident at the outset that, in all probability, several models would be produced, with each successive one hopefully, a distinct improvement over the former.

Procedures

Actually, a dozen models were produced, each with a concerted effort not to lose sight of essential ingredients of former ones. (Selected samples of the models without descriptive sheets for the items are included in Appendix E).

It was admitted, at the outset, that completion of each item was not mandatory in terms of the agreement signed with the State Department of Public Instruction.

It was intended, however, to explore each item in depth and to test the feasibility of each item for an all-out attack in later years. Unquestionably, some of the items would be discarded after adequate dialogue, or field testing. It was decided to state the items in the past tense as though completed, even though it was the intent only to consider doing each item as time, resources, and logic permitted.

As a springboard, the 44 items were listed as propositions to attack, many simultaneously, and some in sequence. These follow:

1. Project Staff from A.S.U., U. of A., and N. A. U. Selected
2. Agreement for Outside Audit Negotiated
3. Preliminary Model Design Established
4. State Advisory Committee Selected
5. Internal Advisory Committee Selected
6. Plan to Identify Educational Goals Developed
7. Plan to Identify Prior Educational Needs Developed
8. Educational Goals from Literature and Research Identified
9. Educational Goals from Arizona Plan Identified
10. Educational Goals from Other State Plans Identified
11. Educational Needs from Literature and Research Identified
12. Educational Needs from Miscellaneous Groups or Individuals Identified
13. Educational Needs from Arizona Plan Identified

14. Educational Needs from Other State Plans Identified

15. Previously Unstated Needs Identified by Educators

16. Educational Goals Classified and Restated

17. Educational Needs Classified and Restated

18. Educational Needs Compared with Educational Goals

19. Model Design Refined

20. Measurable Objectives and Test Items to Measure Them Identified

21. Survey Instruments Developed

22. Survey Instruments Evaluated by Advisory Committee

23. Survey Instruments Revised

24. National Jury Selected

25. Revised Survey Instruments Evaluated by National Jury

26. Survey Instruments Revised; Defensible Samples Selected

27. County School Superintendents Surveyed

28. State Department Divisions Surveyed

29. District Superintendents Surveyed

30. Teachers Surveyed

31. Pupils Surveyed (Urban, Rural, Ethnic Groups)

32. Citizens Surveyed; Ethnic Groups Included

33. Survey Results Analyzed

34. Accuracy Checked: Audit Group, Advisory Councils and State Coordinator

35. Validity Tested

36. Reliability Appraised

37. Needs List Revised--Most Critical Needs Ranked Highest

38. Final Evaluation by Advisory Committee Completed

39. Final Revision of Critical Needs List Completed

40. Product Submitted to State Title III Office

41. Evaluation by Outside Auditor Completed

42. Outside Auditor's Evaluation Analyzed

43. Design for Continuous Assessment for Future Years Submitted

44. Design for Continuous Assessment Approved by Advisory Committee

Perhaps the most profitable aspect of this first step was preparation of a detailed delineation as an attachment sheet for each item. On the attachment sheet was a time allotment, assignment of personnel, and a complete description of what was intended for each item. In some instances, as many as five pages were required to cover the full description of the event in the item.

Preliminary Guidelines

Succeeding and refined models had 52, 46, 39, 36, 29, 227, 25, 20, and other numbers of items. As these were developed, several general ideas began to emerge from consultations with the advisory councils, the consultants, and various other educators:

1. Make the model as simple as possible with as few items as can be used to meet the requirements.

2. Combine items but spell out each one as definitively as possible.

3. Keep the model as close to the specifications of the agreement as possible.

4. Avoid any consideration of requirement of a massive testing program in the model.

5. Assume that there may not be full agreement on the effectiveness of any model, or on how valuable the activities prescribed in it will be.

6. Accept the fact that public reactions are important, and that data obtained from activities should be as learner oriented or derived from the learner as much as possible.

7. Insure that any studies under the framework of the model must relate to learner reactions and learner attitudes about the effectiveness of his or her educational experiences.

Throughout the first ten months of the project, there was a mixture of dialogue, discussion, development, and testing of models, and a motley array of other activities. A basic guideline or set of activities was developed by the team and by the advisory councils as an attempt to provide direction, to coordinate approaches, and to systematize efforts and energies. These 15 guidelines or activities follow:

1. Collation of assessment of need plans and programs from 21 states for careful scrutiny and study.

2. Visitation in six states to learn first hand what they had experienced in the needs assessment approach.

3. Identification of 10 exemplary state programs and extensive correspondence with them for suggestions in needs assessment procedures.

4. Invitation to six nationally eminent consultants to come for intensive analysis and reaction to needs assessment activities.

5. Discussion and dialogue with a dozen or more distinguished scholars in the field of measurement.

6. Contact with several groups engaged in assessment, and in offering contractual services to ascertain educational needs in several states.

7. Contact with several groups engaged in developing behaviorally stated objectives and in measuring outcomes via criterion-referenced test items.

8. Attendance at and participation in a regional Title III conference and workshop.

9. Development of a major reference list (bibliography) on needs assessment.

10. Dialogue and reaction with state and local advisory councils on all aspects of the project.

11. Extensive dialogue with educators (professors of education) on ingredients for a needs assessment program.

12. Extensive dialogue with school administrators on how to successfully attack a needs assessment project.

13. Extensive dialogue with citizenry of the state.

14. Extensive dialogue with pupils and students from upper elementary, secondary, and tertiary levels.

15. Extensive dialogue with graduate students in education who wished to study some aspect of needs assessment either for dissertation or individual research approaches.

In all, over a period of ten months, more than 1,000 hours of time by the coordinator of the project were invested in the foregoing list of activities, while an equal amount of time by other members of the team was directed toward abstracting and refining salient points to consider which came out of these activites.

All of this was backdrop for the ultimate objective,-- that of producing the best possible model for Arizona, and to complete as many items as possible before termination of Stage II. It would be easy to write a hundred or more pages from notes on the fifteen activities listed above, but this would be too burdensome on the reader, since the major attempt of this report is to present and describe the model which was ultimately developed. Some of

the more pertinent highlights from these activities will be included in the descriptive sheets for each item of the model and will be summarized or offered as part of the recommendations.

SECTION III. THE MODEL

Introduction

A quick review of the SENAP agreement stresses that a model should be constructed which would provide for collection and codification of data, and which would yield information about the state's educational needs. Presumably, a follow through of the model activities should yield a list of the top educational needs of Arizona, backed up by data from pilot studies and should present a list of recommendations for activities from which the State Advisory Council for Title III could recommend contractual arrangements for services designed to accomplish the desired results.

Although a preliminary model was designed to serve as a guideline for Stage II activity, the ultimate model to be the major contribution of this report is designed for Stage III, starting approximately in September of 1970. All of the trail models between the first model and the one presented in this section were steps toward improvement or refinement for a final model. Many ideas were tested before the final two or three were developed.

Characteristics of a Model

There are no hard and fast descriptive elements as to what the essential characteristics of a good model consist of. Throughout the United States, that which constitutes a

model for some, would be unacceptable to others. For purposes of this report a model is thought of as a comprehensive plan which states goals, purposes and tentative procedures. It includes a series of items in systematic order for attack. It includes a PERT which illustrates a smooth and orderly progression of steps in relation to each other. It serves as a guideline for attack or as a systems analysis flow chart. It crystallizes action. It provides alternatives of action and possible alternative steps. If goals are not achieved, there are different approaches and the ultimate progress is not too adversely affected. Thus, it is highly adaptable and ajustable. From another viewpoint, a model suggests steps and things to be done; it encourages those performing the tasks to think through the logical steps and the relationships or interdependence of the steps, each to all others.

It is obvious that a model should include descriptive sheets (attachment sheets) for each item on the model. These should help the researcher or investigator to see a total picture for each item with its time requirements, the person or persons who will be responsible for carrying forth the activity, and, in some instances, suggestions for completion of the activity. The chart helps one to visualize the total process a step at a time and which steps can be carried on simultaneously. Finally, the model should have a preface or introductory narrative description.

Criteria for a Good Model

For purposes of this report, 20 criteria for a good model were developed. These follow:

1. Is the model adjustable?
2. Is the model self-correctable?
3. Is the model designed for long range use, especially to fill information gaps?
4. Is the model designed against establishment of a sterotype among the states?
5. Is the model geared to the unique situation in which it is to be used?
6. Is the model pupil-oriented, capitalizing on pupil opinion about educational needs?
7. Is the model designed to develop a list of critical educational needs, supported by reasonable data?
8. Is the model designed to develop a reasonable list of recommendations for action which can be used by the Advisory Council to Title III?
9. Is the model designed to identify some needs which the State Department of Education could use to mount special programs to attack them?
10. Is the model designed to develop special needs which are learner oriented--related to pupils in contrast to institutional needs?
11. Is the model designed to identify needs from other sources than data produced within the model, and to mount some programs to get at them via Title III funds or SDE funds?
12. Does the model provide for utilization of top talent within the state in a task force approach?
13. Does the model make specific provision for participation by professional education membership groups or societies?
14. Does the model have latitude and alternatives based on which proposals or projects are selected for action?

15. Does the model have a built-in mechanism for continuity and easy transition to a succeeding model for the next page?

16. Does the model take into account or build upon the previous attempts at educational needs assessment within the state or region?

17. Does the model involve consultants of high capability, both in research aspects and in planning?

18. Is the model concerned with learner needs, in cognitive, affective, and psycho-motor domains?

19. Does the model give adequate emphasis to methods of treating data to ascertain validity and reliability?

20. Does the model specify procedures and criteria for determining criticality of educational needs?

It is obvious that a model, no matter how carefully developed, may not meet adequately all of these criteria. However, the criteria can serve as sensors for the direction a model should take. Actually, these criteria can serve well also as guidelines throughout the model development.

Other Guidelines

As a result of the extensive consultations and dialogue growing out of the 15 preliminary guidelines or activities listed previously, and as an outgrowth of consideration of the criteria for a good model, several suggestions emerged virtually as a concensus which might serve as other guidelines to be used along the way. In this instance, there is some repetition of ideas expressed earlier in this document, but these reinforced the product of distillation to yield the following:

1. Do not rely heavily on comprehensive testing or other forms of "hard" data to develop the needs list. In fact, it would be better at

the outset to avoid reliance on hard data (test scores) altogether.

2. Capitalize on opinions of populations (citizenry) from all strata.

3. Relate heavily to pupils and to the general public in soliciting information which can be translated into need.

4. Keep all instruments as simple as possible.

5. Strive to help all respondents feel that their opinions are important, are respected, and will be very helpful. In short, sell the idea that participation and assistance are very much needed, and will be very much appreciated.

6. Make the major thrust toward mounting some programs (even if only pilot-run) to meet felt needs so that there is some sense of action or something worthwhile being done.

7. Set in motion some follow-up evaluation or appraisal to see how well schools are meeting some of the needs the public identified, or develop a full report on plans to meet these needs.

8. Push vigorously to enlist the support of as many professional membership societies or groups as can be obtained, in accepting responsibility for helping to identify needs, and then assist in making those needs.

9. Centralize all efforts toward meeting needs and toward identifying needs continuously through the State Department of Education.

10. Sell the idea that this is a long range program (perhaps 15 or more years) from the very outset.

11. Establish a series of task forces to attack specific problems in a continuous process.

12. Break down needs into reasonable "bites to chew" and solicit help from a variety of agencies (primarily university bureaus of educational research and services, or consulting groups) with attack simultaneously on several problems.

13. Document needs as a responsibility of the state, seeking legislative appropriation via the State Department of Education.

14. Wherever feasible, indicate the similarity of crucial needs of one state with another in the same region (e.g. -- western states as a group). This tends to gain support from leaders in education and from legislative groups.

15. Attempt to show patterns of needs from several types of sources and emphasize similarities, comparable aspects and wide deviations, if any.

These were helpful as a frame of reference in putting the components of the model together. It should be noted at this point that two different titles for the same governmental body have been used. In Arizona, for many years, the chief state school department has been known as the State Department of Public Instruction. This type of title has been used in many states. In 1970, the chief state school department in Arizona became the State Department of Education. From this point forward, the latter title will be used exclusively when referring to this body.

The Model

If this model is accepted and implemented, many, if not all, of the items contained therein will be accomplished during Stage III. The language is deliberately couched in future tense as activities for Stage III. These, for the most part, grow out of pilot studies which were completed in the preliminary model for Stage II.

All three universities in Arizona will be involved as participants in this endeavor. The Bureau of Educational Research and Services, Arizona State University will serve as the central coordinator for the total project prescribed in the model. It will assume the responsibility for carrying forth the requirements specified in the model, serving as prime contractor for the project. However, some important tasks indicated in the model are clarified in paragraphs to follow.

An agreement will be reached with a consulting agency, not connected with the project, to evaluate the plans and progress of the project. The agreement will be reached early so that the outside audit can follow through the entire project.

Three advisory councils will be selected to provide continuous evaluation and counsel for the project. An internal advisory council composed of people located near or within Arizona State University will be selected to provide a check-up by people close to the project. The group will meet monthly in a general advisory and consultative capacity and will be selected largely from faculty of the College of Education of A.S.U. A state advisory council will be selected to provide continuous evaluation and advisement for the project. At their monthly meetings, all project developments will be reviewed, ideas will be tested, and recommendations will be made. In addition, a third advisory council, made up of citizen council representatives will advise and evaluate the progress and activities of the project.

A considerable amount of time will be spent in developing objectives, goals, and needs for this SENAP. All of the project participants will help to create a working dictionary of terms. This reconciliation on dialogue should channel the thinking and efforts of the staff toward common objectives and goals in the assessment of educational needs for Arizona.

The basic strategy of the assessment of the present educational status in Arizona will be aimed toward the gathering of identifying information rather than providing evidence of the harm of any educational programming. The underlying premise will be that relevant change in education can be made and can be measured only when relevant change begins at a known base-line and moves in a direction toward some set objectives agreed upon by those parties involved in the educational process.

Since the model for SENAP is self-correcting, one of the primary steps will be to look at other assessment models for possible guidelines. An attempt will be made to obtain more than twenty assessment models from other states for study. Consultants will be utilized to provide information and alternatives upon which to base decisions relating to model formation.

Educational literature and educational research will be inventoried and analyzed in order to find educational goals which might pertain to an Arizona assessment model. Assessment literature from the Arizona Plan and other state plans will also be used to meet this end.

The Delimitations The delimitations of the proposed research are identified as follows:

1. This study will be applied only to the public schools in the State of Arizona; no attempt will be made to produce an educational needs assessment model for the junior college system, the universities of the state, or for any private entity.

2. This study will be limited to the development of a management tool for decision making which could be used in evaluational and comparative studies of the educational needs of children in Arizona's public schools.

The Assumptions The assumptions inherent in the study include the following:

1. Relevant change in education can be made and measured only when this relevant change begins at a known base-line and moves in a direction toward some set objectives agreed upon by those parties involved in the educational process.

2. A baseline of information is necessary for overall state coordination of evaluation.

3. Statewide assessment of educational needs must be limited to a maximum of one each twelve months.

4. Assessment is a continuing process of defining and refining educational needs which should encourage the participation of the State Department of Education, school districts, and citizens.

5. A critical educational need is more easily identified than an educational need that has not reached critical proportions.

6. Efficient assessment of educational needs provides school management with necessary information for making competent decisions.

7. The ultimate decision as to which needs are attacked with vigor on a statewide basis rests with the Superintendent of Public Instruction.

General Background The preliminary model design for Stage II was refined more than 10 times along the way. Its scope was narrowed and targets were more finely pinpointed. Selected coordinators of state plans and directors of educational needs assessment projects were visited and their evaluation and reaction to the tentative model were noted.

A chart of all special events for the current years's activities was developed. Such events as regional assessment conferences were attended.

For the model proposed for use in Stage III, full recognition of the less desirable aspects of questionnaires and an awareness of the impracticality of interviewing all Arizona citizens was noted. A plan was developed which will be based on stratified sampling procedures.

The sampling plan will be based on the identification and stratification of the state in terms of educational programs. The sampling methodology will be based on a random sample of several units of the population and a saturation sample of the population when the number of sample units is small enough that this is feasible.

The sampling processes planned will require a stratification of the state into twenty or more basic strata. Three factors will be indentified for stratification of the samples. The variables on which the strata will operate will be: (1) terrain of the state, (2) population, and (3) economic level. The terrain of the state will be divided into three geographic

areas. Behind this rationale is the belief that the terrain of the states determines the difficulty of transportation and the economy of the area. Industrial and commercial opportunities of the area are affected as well as educational programming.

The second of these variables will be the density of population. Density, defined as people per square mile, influences the size and administrative organization of the schools, the instructional offerings, and the outlook of the peoples of the area.

The third variable will be economics. School programs are affected by economic influences. This influence on school programming demands more knowledge of and about factors related to poverty areas. The three stratification variables will be interlocked. The first one will be stratified over three basic regions, the second over three units of population, and the third one will reflect two units of economic levels. Interaction of these three will produce a stratification of 24 basic strata, if carried to ultimate proportions.

The sampling will be processed by the application of instruments to specified population groupings. Opinionnaire instruments will be developed form the previous Arizona Plan in the Stage II Model and other state plans. It is proposed that there will be 20-25 critical need items and a "write-in" section will be provided. It will be given to a random sample of school board members and professional educators. From the results of this survey, those needs

items of highest priority will be extracted. These extracted items will be used to produce an identification matrix relating problem area priorities to more specific educational needs. A space will then be provided to associate the identified needs with specific arbitrarily selected populations. During the year's assessment, the resulting instrument will be administered to a random sampling of the state legislators of Arizona, to all non-clerical members of the Arizona State Department of Education, and to a random sampling of school district superintendents in Arizona. Many other groups will be included in future assessments and will include at least the following:

1. High school principals
2. Elementary school principals
3. Public school teachers
4. Public school students
5. Professional educational groups
6. Nationally known educators
7. Lay citizens
8. School board members
9. Public school supervisors of instruction
10. County school superintendents
11. The State Board of Education
12. Education professors from Arizona's teacher preparation institutions
13. Business and industrial leaders
14. Student teachers
15. Drop outs

In addition to the needs assessment questionnaire, other data will be gathered to provide a more complete description of the context within which educational needs are considered. Many of these data will be obtained from the data processing division of the State Department of Education. These will include, insofar as they become available, the following:

1. Public school attendance by classroom ADA
2. Public school membership by classroom ADA
3. Vocational educational information on individual students
4. Adult basic education data on individuals and the courses they are taking
5. Public school finance information
6. Statewide textbook inventory
7. Title I information on individual students
8. Curriculum data on high schools and elementary schools
9. Public school budgets and expenditures compared
10. School personnel information

The Governor's Report should also contribute much information for this study as well as various recent dissertations and studies on state or local educational issues and problems.

Measurable objectives and test items to measure them will be identified and will be incorporated into a set of instruments to assess the educational needs of public schools of Arizona. Consultants will be used to develop instruments which possess utility and relevancy. Validity

and reliability of the instruments will be assessed by the staff and consultants.

All other pertinent data from all possible sources will be collected as input for SENAP. This includes information from State and County offices, school districts, data processing, and many others.

The staff will prepare the instruments for mailing to the various groups. Tabulation procedures will be developed and accomplished as the instruments are returned. A detailed plan for analysis and interpretation of the data will be developed.

Job orders will be activated using the Testing Service at Arizona State University to perform the data analysis. Total data analysis will include analysis of all input as well as that from the mail-outs. Consultant services will be used to aid the staff in this endeavor. Educational needs for the current year will be determined from the results of the total data analysis. These educational needs will then be interpreted and tested against reactions of related groups. Finally, the outcomes will be refined for inclusion in the final yearly report on SENAP, Stage III.

For the continuous assessment of educational needs, a proposed design for the next year's model will also be developed. Many of the previous guidelines will be used and much of the procedure and machinery will be maintained. However, some new personnel in both staff and

consultant capacities will be injected into SENAP to keep it dynamic.

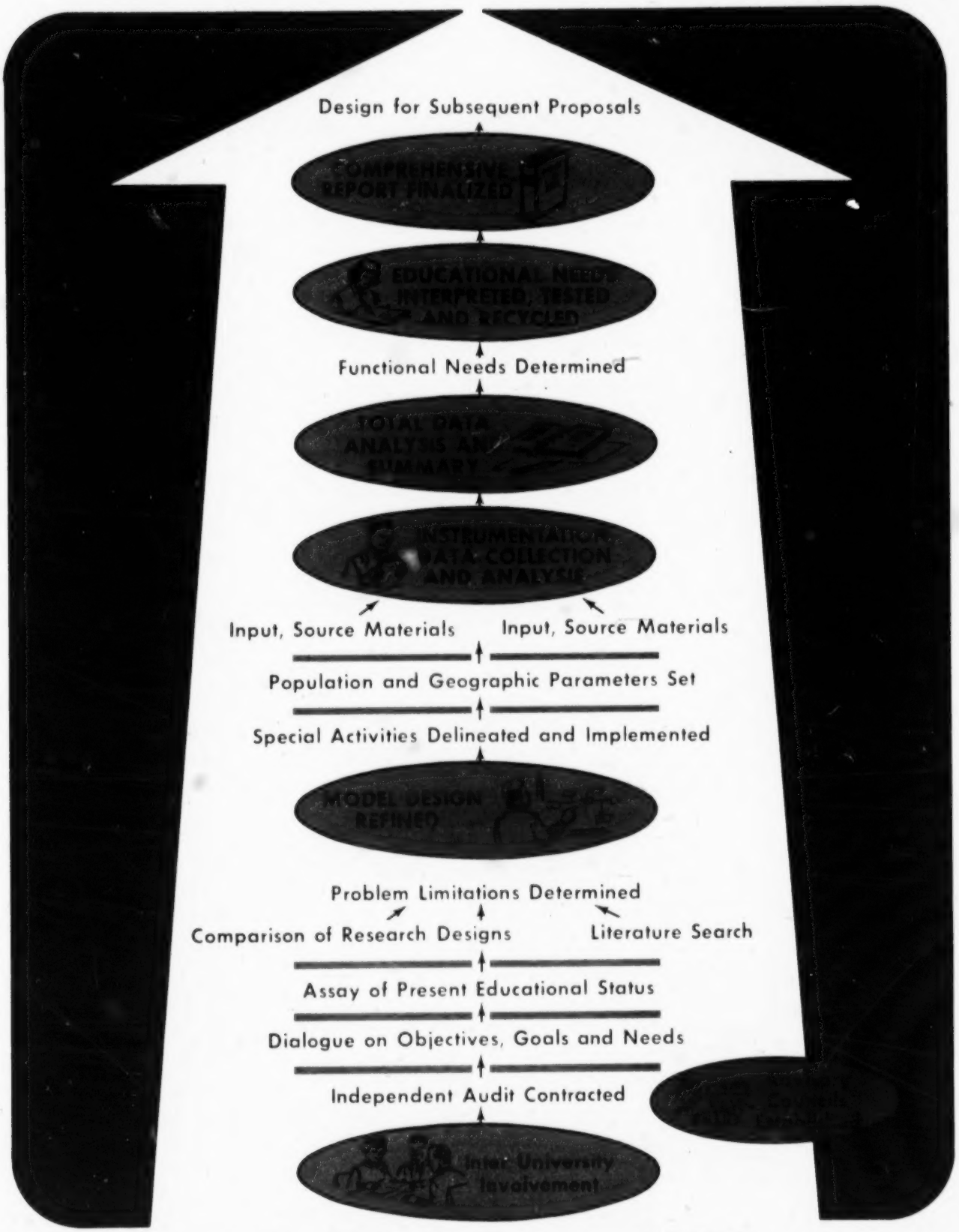
The proposed SENAP model for Stage III is presented on the following page.

General Rationale for Supplemental Attachments Sheets for Items in the Model

The purpose of the attachment sheets is to project a tentative working framework for each item. In some instances, the probable time requirement and the assignment of individuals to work on the task are listed. All of these sheets will be refined and extended as the project moves along.

In a sense, each of the 20 items becomes a separate goal. Thus, in many instances, especially in the last half of the group, they are expressed as items which must be completed before the project is finished. They are framed in the reference as having been completed, even before effort is launched. This means that when this model is adopted and implemented, these items should have been completed before termination of Stage III.

It should be re-emphasized that all resources will be utilized to the maximum extent in each item covered by an attachment sheet. This means that consultants, all advisory council members and all other resource personnel will be used not only in exploratory capacities, but in reaction and refinement activities as well. Moreover, as a product of this total interaction, items may be modified in the light of experience along the way. This is a feature of the model self-correction mechanism.



ARIZONA EDUCATIONAL NEEDS ASSESSMENT MODEL

Item 1. Cooperative Activities of Three State Universities Determined

Time allotment: Month of September

Responsibility: Coordinator and team members of the project

The project coordinator will meet with the three deans of the Colleges of Education in Arizona (or their designates) to discuss the overall participation of universities in the project. The unique resources available to the project's needs will be examined in depth. A central liaison faculty member from each university will be selected on recommendation from each dean. Responsibilities and opportunities for service for each individual to be involved in the project will be delineated. Efforts will be made to develop a team approach much like a consortium with all three universities participating fully. Of particular significance, will be the development of a summary of research work done at each university which has pertinence for the project. Remuneration schedules for services will be developed and approved.

Item 2. Contract for Outside Audit Negotiated

Time allotment: Month of September

Responsibility: Coordinator of project

It is axiomatic that the concept of accountability held as important for needs assessment should extend also to SENAP. Therefore, several consultant firms with expertise in conducting an outside audit of this type of project will be contacted and invited to submit a bid for providing an outside audit. The primary focus should be to determine whether or not the conditions

of the agreement (contract) were fully met, and whether or not the project staff completed satisfactorily the tasks they set out to do, as required by the agreement. The maximum amount of money allocated for this should not exceed seven and one-half percent of the contract price for the project.

The outside audit group should begin its activities early and should follow through every step of the way, periodically taking stock of progress toward fulfilling the terms of the agreement.

Item 3. Three Advisory Councils Selected

Time allotment: Month of September

Responsibility: Coordinator of project

There is a great need for three different types of advisory councils. One should be composed of professional educators, selected on a statewide basis. Membership should include the three deans of colleges of education (or their designates), three professors of education, three school administrators, three representatives from junior colleges, and three representatives from the State Department of Education.

The advisory council of internal nature should include nine specialists in measurement and/or research design largely from the A.S.U. College of Education.

The advisory council from memberships in community action councils (such as LEAP) should include twelve members, two each from the six most active community action councils in Arizona.

Each council should meet monthly, October through May. A definite schedule for the remainder of the academic year should

be developed at the October meeting. The purpose of each council would be to provide dialogue and reaction on each activity in SENAP. Ideas would be tested and outcomes would be weighed for pertinence. Any input which would be fruitful for the project would be considered as "fair game" activity of each council. The Coordinator of SENAP should serve as chairman of all three councils.

Item 4. Dialogue on Objectives, Goals, and Needs Developed

Time allotment: Months of September, October, and November

Responsibility: Coordinator and team members of the project

Extensive work copies should be developed by the team members to include objectives, goals and needs for reaction and discussion by each of the advisory councils during each of their first three meetings. Plans for extensive dialogue should be made with professional membership groups, educators, consultants, citizen groups, school pupils, and all others where ideas could be tested. Wherever feasible, a philosophical background for needs assessment and delimitations of assessment procedures should be brought into the discussion.

Item 5. Assay of Present Educational Status Begun

Time allotment: Months of November and December

Responsibility: Coordinator and team members of the project

This should include a total assay of State Department of Education activities, the data it possesses, and the activities

it is promoting for meeting the need. Also, total effort should be directed toward collating all achievement test scores which school districts have. In addition, any data from special regional testing programs should be added to the profile.

Every pertinent factor which would describe the present educational status in Arizona should be built into the total panorama in order to provide the most accurate picture of what actually obtains in Arizona.

Item 6. Literature Including Other State Plans Reviewed

Time allotment: Months of September through November

Responsibility: Coordinator and team members of the project

The reference list developed in Stage II should be reviewed with deletion of less pertinent entries. A thorough review of the literature since January 1, 1970, should be made with inclusions of all related material. This total bibliography, as revised, should be carefully annotated.

A review of reports of assessment of educational needs from 15-20 states, including high visibility ones, should be conducted. Salient ideas should be collated for testing with the advisory councils at their November and December meetings.

The total bibliography and the highlights from their state assessment of need plans should be reviewed periodically by the advisory councils. Ideas, concepts, and activities from all of these sources should become input for use throughout the project, wherever pertinent.

Item 7. Comparisons of Various Possible Research Designs Studied

Time allotment: Month of December

Responsibility: Coordinator and team members of the project

It becomes urgent to review the various research designs or models developed in Stage II, those of other states, and those recommended by consultant groups and other professional educators, to look for possible improvements in this model. Also to be taken into account, would be anything suitable for possible modification from conferences, workshops, advisory councils and any other contributions toward refinement of this model. However, this activity should not interfere with an on-going effort in items of the model. There will be, of necessity, activity on several items simultaneously and progress should not be impeded while waiting for possible refinements of the model currently used as a guideline. Any model should be sufficiently adjustable and self-correctable to provide for improvements, refinements, or re-direction along the way as it emerges. This is tied to items 8 and 9, following, and there will be re-statement of this intended activity as a part of items 8 and 9.

Items 8 and 9. Problem Delimitations, Assumptions and Hypotheses Determined; Model Design Refined

Time allotment: Months of December and January

Responsibility: Coordinator and team members of the project

In these steps, there should be reviewed the delimitations, identification of needs and goals, assumptions and hypotheses as refined from all previous items in the model. This should focus somewhat on a clarification of changes and refinements prior to the final model design which will be operational for the remainder of Stage III. In fact, all that has come to bear on the project from whatever activity should be revfewed for possible ramifications on model change. Although additional changes on the model might conceivably be made after this point, it would be better to direct these self-corrected refinements toward the working model for Stage IV.

It should have been assumed that some field testing of the model would have occurred prior to December, and any changes growing out of this activity would have been made prior to December.

Item 10. Special Activities for the Year Delineated and Implemented

Time allotment: Months of September through January

Responsibility: State Advisory Council

In addition to the general tasks indicated in the model, there should be considerable option for the State Advisory Council to Title III to select extensive projects which are designed to meet some of the great educational needs of Arizona. It would appear advisable to study all of the needs coming within their purview, and then select projects which would meet some of these needs. Also, the Superintendent of Public Instruction should constantly attempt to mount projects which would make positive impact on the ever increasing educational needs.

It is readily admitted that the State Advisory Council may wish to seek professional advice on which, if any, projects it should recommend for funding. Obviously, funds are limited and the Council will wish to be as effective as possible in launching well-conceived projects.

Item 11. Population and Geographic Parameters Set

Time allotment: Month of January

Responsibility: Coordinator of project

The total unique nature of Arizona's population should be reviewed with special emphasis on the nature of its several sub-populations. The sociological, economic and psychological factors of pertinence should be blended in. This will vary from year to year as better understandings of the nature of Arizona's citizenry are developed.

Item 12. Instruments to Carry Out Special Activities Developed

Time allotment: Months of January and February

Responsibility: Coordinator and members of the team

Too much emphasis cannot be placed on developing efficient instruments for data collection. At best, there will likely be weaknesses which will mitigate against the effectiveness of the data collection operation. It behooves the principals involved to engage the very best consultants and experts available in developing these instruments. Decisions should be made early about the need for and how best to field test, to validate, to use juries of expert thinkers to help refine, as well as to use all other means of producing the best possible instruments.

Item 13. Other Pertinent Data from All Sources Collected as Input

Time allotment: Months of October through April

Responsibility: Coordinator and members of the team

This is a highly-complex, never-ending process. Hard data about the total setting, information from testing programs both state-wide and local districts, State Department of Education data, county superintendent data and other pertinent data all play important parts in this step. The sources of information are unlimited, and each new day may bring forth data unavailable on a previous day, but which should be included. Thus, there is no logical cut-off date or target date which can be firm with respect to data collection. The investigators will have to exhibit flexibility. There is also great likelihood that there will be spin-off of smaller studies as some data become available which will tend to be so attractive that they may shunt efforts aside temporarily from the central effort.

Item 14. Instruments Mailed or Distributed

Time allotment: Month of March

Responsibility: Members of the team

The categories of the total population should be determined for distribution of ' struments, or those to be included in the interview process. The design for sampling should be developed prior to March and the mailing lists should be prepared. It is recommended that approximately 25 categories of citizens be used for the mail out, an increase over the 21 used in Stage II, and that the interview technique be used with about half of these

categories to obtain some comparison of response. The total number of instruments to be administered should run in the range of seven to ten thousand.

Item 15. Instruments Returned and Data Analyzed

Time Allotment: Month of May

Responsibility: Members of the team

This approach should provide for proper programming for computer analysis of the data.

Item 16. Total Data Analysis from All Sources Completed

(same programming as item 15; can be combined with it as one operation) Heavy emphasis should be placed on reliability, validity, correlations and comparisons, use of percentages, and other statistical treatment which would be helpful.

Item 17. Educational Needs Determined from Total Results

Time allotment: Month of June

Responsibility: Coordinator and team members

In a series of team seminars, the results of data analysis should be studied to derive a list of the 15-25 most critical educational needs for Arizona.

Item 18. Educational Needs Interpreted and Tested Against Reaction of Related Groups

(Continuation of item 17 extending into July.)

Item 19. Final Outcomes Refined for Inclusion in Comprehensive Report

(Continuation of Item 18 with concentration on completion by end of July). The outside audit-evaluation should be analyzed and noted in the comprehensive report.

Item 20. Design for Next Year's Proposal Developed

Time allotment: Month of August

Responsibility: Coordinator and team members

All refinements from activities during Stage III should be blended into a new proposal for Stage IV. The prime emphasis should be directed toward continuity, easy transition and consistency. The most important requisite would be to set the stage to mount some programs to alleviate some of the most critical educational needs of Arizona. Also, it would be very important to blend in some new directions and some new thinking as a result of what has happened in Stages I, II & III.

In general, the purpose has been to present a model with explanation of each of its items. This is the chief requirement of the agreement. The primary approach has been to build a new and better model from experience with previous models. In any event, emphasis has been placed on providing ample latitude and flexibility to try new ideas and to test new concepts.

SECTION IV.

ACTIVITIES RESULTING FROM USE OF THE PRELIMINARY MODEL

Introduction

The preliminary model was tentatively adopted as a plan of operation for Stage II of SENAP. It was decided to conduct pilot studies, to do field testing, and to exploit dialogue and discussion as extensively as possible within the scope of resources available. It appeared logical to use the preliminary model as a guide for activities in an attempt to bring together as much material as possible as backdrop for development of a refined workable model for future use and to set the platform for Stage III. All of this activity proved to be helpful in the total project. The attempt here will be to review highlight activities associated with each of the 44 items on the preliminary model as deemed appropriate for this general report.

Procedures

The preliminary model for Stage II (see Appendix F) served as a helpful frame of reference or guideline. The items were not necessarily taken in direct sequence, inasmuch as it became necessary to work on many simultaneously and to skip about to such items as number 21 near the outset of the project. In addition, it was decided along the way to combine some steps, to add new ones, and to expand coverage

of the instrument to include a dozen or more additional groups. All of this was discussed in advance on three separate occasions with the State Coordinator of Title III (Arizona) and was approved by him. Also, approval was indicated by both SENAP Advisory Councils and was recommended by consultants for the project.

Inasmuch as major emphasis in the agreement (contract) and in subsequent discussions with the Coordinator of Title III was to conduct extensive dialogue with as many different groups or individuals about the critical educational needs in Arizona as was possible, there was heavy effort in this direction.

The major activities in the preliminary model used in Stage II were grouped under several general headings. Other activities, not included in these, are self-explanatory or were not attempted. The nine major groups follow:

1. Review of strategies for assessment--discussions and dialogue.
2. Review of general directions and plans.
3. Development of major reference list (bibliography).
4. Summation of specific activities deemed necessary for project completion.
5. Development of and testing of instruments.
6. Distribution of and collection of instruments.
7. Collation and analysis of information from all sources.
8. Development of needs list and of general recommendations.
9. Development of plans for the future.

The first step in the development of the preliminary model design was to review strategies for assessment.

Fifteen questions were posed with extensive discussion of each one by the consultants and advisory councils:

1. Is it necessary to include all three domains -- cognitive, affective, and psychomotor?

2. How much pre-planning is necessary before actual pursuance of the meatier aspects of the project?

3. How definitive is the agreement which was negotiated and how much deviation or substitution could or should apply?

4. Who and how many should be involved in the planning and in the execution of the project?

5. What total resources are necessary to conduct the project and from which sources of supply can they be expected?

6. What special competencies and capabilities will be required among personnel participating in the project? (e.g. -- expertise in systems design, statistics, measurement, sampling, data processing and research design)

7. What special components should be emphasized in actual design of strategy? (e.g. -- including entire spectrum of student achievement--all kinds of students in all areas of learning at all levels of achievement)

8. What general components should be included in the actual design of strategy?

   a. development and selection of learning goals and behavioral objectives

   b. depiction of perceptions about relevance of objectives and development of criterion-referenced test results of achievement of the objectives

   c. development of a design to assure relevance and importance of objectives and extent to which realization of them was achieved (via analysis of data)

   d. provisions for submitting the data to the educational leadership charged with policy development and with decisions as to which actions are to be taken.

9. What should be the nature and design of instruments to be used for data selection?

10. What should be the scope and coverage in the selection of information or data?

11. How much emphasis should be given selection of "hard data" as contrasted to "soft data"?

12. What approaches should be made for ultimate analysis of data in order to derive maximum benefits? (also what steps should be taken to determine reliability and validity of data?)

13. What means can be used to translate and interpret information collected into a list of critical or crucial educational needs?

14. What can be done to indicate where and how these needs can best be met -- which agencies should be responsible and which courses of action should be recommended?

15. What are the time constraints for each facet of needs assessment and how can these be reconciled with long-range continuous needs assessment projects?

All of these and other questions were probed in depth with a large number of administrators, other educators, and a motley array of individuals who might have some knowledge of or concern about an educational needs assessment approach. Throughout this phase, a heavy focus was directed toward developing perspective for what might be most profitable in Stage III as well as in Stage II, both in model development and in activities which should be promoted.

It appeared logical that the team working on this had four major responsibilities, even though all of them could not be consummated within Stage II:

1. To develop a major long-range plan for needs assessment.

2. To set the stage to develop and select needs, goals, and objectives.

3. To plan for a means of testing students to determine the extent to which the needs, goals and objectives have been met.

4. To formulate plans for continuity of the needs assessment project over a period of years as well as how to expand or extend the concept of assessment to more meaningful concepts.

A second phase of the preliminary discussions brought forth a general adoption of the oft-used four basic tenets of American Public Education as philosophical guidelines:

1. Education is for all youth.
2. Education is everybody's responsibility.
3. Schools belong to the people and are their agency to transmit their culture to generations yet unborn.
4. Schools should take each child where he is and help him go as far as his capabilities permit.

The third phase of the preliminary discussions set as goals the following activities:

1. Development of a model in conformity with the agreement.
2. Development of a list of projects to recommend to be inaugurated to help Arizona catch up with other states on needs assessment.
3. Development of a list of the most critical educational needs of Arizona supported by soft data (opinionnaire) from a broad segment of the citizenry.
4. Development of a broad picture of the hard data available in Arizona which might have limited use in a needs assessment project.
5. Development of a list of educational needs (in general terms) as conceived by professional educators (these would not be supported by extensive back-up data).
6. Decision to go as far down the road as possible on as many items as feasible of the preliminary model, irrespective of requirements in the agreement.

During the first four months of the project, a large number of general assumptions or postulates were collected from workshops, conferences, consultants, advisory council members, and other sources. These were taken into account as the total activity progressed, but were not used as delimiting pictures in pursuit of any item.

Some of the more pertinent ones summarized from a list of 80 and which were the results of more extensive dialogue follow: (some of these were given or alluded to earlier under another topic).

1. The educational needs in one state will probably approximate, in general, the needs discerned in many other states, even though economic, population and sociological differences exist among various states.

2. It might be worthwhile to have a master task force develop an overall needs assessment for the 50 plus states and territories with a built in means of adjustment to meet the needs of a given state.

3. The basic and crucial educational needs of most states are already known, but supportive data will give decision makers more back-up to proceed toward meeting them.

4. The major efforts should be directed toward mounting programs to alleviate key needs which are presently known.

5. The validity of criterion-referenced tests is greater in terms of what students really know than it is for standardized achievement tests.

6. Needs assessment should be a continuous process, but reports on assessment should be limited to one each twelve months.

7. The educational needs of each state are overwhelming; the focus should be only on the most critical needs wherein the deficiency leads to some degree of crisis. The never-ending process may get to needs of low criticality, eventually.

8. In all assessment processes, there should be a positive approach toward gathering information which can be used constructively rather than gathering information which would tend to document the harm or malpractice of any educational program.

9. It must be assumed that relevant changes in education can be made in an orderly manner.

10. Emphasis should be placed on student involvment in the collection of information.

11. Information collection should concentrate on opinionnaires, questionnaires, checklists and interviews with little effort on collection of hard data in the initial stages of assessment.

12. Each assessment project should begin where the students are (used as a baseline), and should move toward realization of agreed-upon objectives.

13. The total activity for assessment should be held in line with resources available. This probably means that interviews as a technique should be limited in number and that sampling techniques should be abundantly employed.

14. It is highly recommended that a special task force be employed to devise the instruments to be used and to plan how the data will be treated and interpreted.

15. Every effort should be made to cooperate fully with all national or regional assessment programs, but their data should be used with discretion.

16. A great need exists to mount regional attacks via independent consulting organizations to develop behaviorally stated objectives and criterion-referenced tests to measure their degree of realization. At the local level, teachers should be trained in selection or modification of objectives, and in use of criterion-referenced items to measure what happened to the child.

17. Task forces should be an integral part of the assessment design. These should be set at three levels - local district, State Department of Education and institutions of higher learning.

18. Public opinion, including student opinion, is tremendously important in the early rounds of needs assessment, and possibly on an increasingly significant basis in long-range activities.

Review of General Directions and Plans

Throughout the project, the general thrust and plans to move forward were reviewed and re-cast more than a dozen times. All of these were tested with nationally eminent consultants, with distinguished scholars in the field of measurement and research design, with state and local advisory councils, with educators, administrators, adult citizenry and students. The intent was to develop

guidelines for actions in identifying goals and needs for the education of Arizona's young people. A number of working papers were developed as a basis for dialogue with the above-listed groups. In all, more than 100 documents or working papers were xeroxed for discussion purposes for these groups. The approach here was to "talk out" every possible ramification of the project which would be helpful, and to prepare a good seed bed for later activity. All of the groups listed above participated in these discussions with a total involvement of more than 500 hours of dialogue.

Development of a Working Reference List

A great amount of time was invested by the team in drawing together a comprehensive reference list (bibliography) which might prove useful in SENAP. Particular emphasis was directed toward studies which had been completed in Arizona and on materials which were particularly applicable in Arizona. Highlight ideas or contribution were abstracted by the team for discussion with all individuals participating in the project. In fact, many of the statements in the working papers were reflections of ideas found in the reference list. This form of bibliography, only partially annotated, (to save space) is included in Appendix G. It is called a working reference list (bibliography) because it is designed to be useful quickly and does not necessarily follow standard bibliographical format.

Miscellaneous Activities

There were many important activities throughout the project which do not fall under a major category with a specific product.

The team or staff put in an average of 120 hours per week working on such significant items as writing behavioral objectives, excerpting material from the literature, refining models, planning and carrying out hundreds of important tasks associated with the project.

A contract was developed and signed with Mountain States Consultants, Inc., for an outside audit. There was continuous interchange of information on how the project was proceeding. Their principal officer for this project audit came to Tempe to obtain details, and the coordinator of the project made three trips to Denver to report progress along the way. The principal responsibility for the outside audit was to ascertain whether or not SENAP had accomplished the requirements of the agreement with the SDE, and whether or not those working in SENAP had done what they agreed to do to meet fully the conditions of the agreement. A copy of the agreement for the outside audit is found in Appendix H.

The state advisory council and the internal advisory council met regularly to discuss all materials developed, avenues of activity which should prove to be most fruitful, and ideas or conclusions generated along the way.

Outside consultants were brought in to critique plans and offer advice on proposed procedures. In addition,

several out-of-state consultants were visited and were queried about best approaches to some of the problems or difficulties which were encountered.

Development of Instruments

One of the major undertakings was the development of instruments to be used for gathering data or information. More than a dozen were developed after considerable study of four successful ones from other states. The instruments were refined by both of the councils, by special consultants, and by specialists in measurement and research design. All were trial-tested by local groups and field-tested to ascertain whether or not they would produce the kinds of information identified as essential in determining critical educational needs in Arizona. In all instances, the intent was to design instruments which would be useable in Stage II and would be a good springboard for use (after further modification and refinement) for Stage III. Samples of the instruments and introductory letters are included in Appendix I.

Distribution of Instruments and Collection of Data

Plans were made for distribution of the instruments, partially on a sampling basis and partially on a total population basis. For example, all of the county superintendents, all directors of divisions of the State Department of Education, all superintendents, all high

school principals, and all elementary school principals were sent the instrument, while for all of the other of the total of 21 categories, a sampling technique was used. A tentative mailing list of approximately 4,000 was developed. These were all coded by number or by letter in order to categorize like groups together for tabulation. In most cases, the material was mailed to the hoped-for respondent; in others, it was hand-carried to groups. In the end, some categories were expanded so that a total of 4,976 instruments were used. (See Appendix J for the list of categories included). There was not sufficient time to develop any type of follow-up device to elicit a higher percentage of returned instruments. Through returned instruments or through interview using the instrument, there was a return of 2074, or 41.7 per cent. Since they were coded by letter or number, all returned instruments were put in labeled folders to keep those in the same category together. By category, the response return varied from a low of seven percent to a high of 66 per cent, with most of them falling between 30 and 50 per cent.

Much consideration was given to ways and means of tabulation of data in order to yield the most nearly valid indication of opinions of a small segment of the citizenry of Arizona with respect to critical educational need. Several types of tabulation were given a trial run. In the end, each category was tabulated separately with respect to frequency of indication of rank for each general need and frequency of indication of rank for each specific need. Then, mean ratings were established for each general need and each specific need.

The specific needs were ultimately used to interpret the focus or point of emphasis of the general need.

The findings from this activity are reported in Section V, along with other material from other studies. From all of these, a distillation and some recommendations will be presented in Section VI.

SECTION V. THE FINDINGS

Introduction

From a variety of sources, are presented herewith Arizona's critical educational needs as indicated in this project. All of these are from the "soft data" approach. As was specified earlier, it was decided not to include highly sophisticated statistical techniques with the use of test scores during Stage II. Rather, it will be recommended that this type of study and other studies be made in Stage III to corroborate or to validate that which is reported in this section.

All information submitted here is from pilot studies only. These are preliminary trial runs to ascertain what would be obtained via these procedures. These should be helpful in decision-making in Stage III relative to the intensiveness of the data gathering, to the degree of sophistication statistically, and to the design of the instrument which will be required to move further down the road in needs assessment in Arizona. It is asserted, unequivocally, that this approach in Stage II is a prior step for a successful Stage III to follow.

Obviously, the principal findings here will be those supported by data gathered and interpreted from the two instruments in Stage II. However, it is considered worthwhile to include the findings developed from the extensive

dialogue conducted on many fronts and with many different groups. Some further distillation, synthesis and coalescence will occur in Section VI under the recommendations, wherein a list of 15 educational needs in Arizona will be offered in decreasing order of priority. Thus, wherever feasible, needs will be presented with mean ratings for relative importance. This should be helpful in establishing priorities for attack, but is not necessarily a sound statistical device for validating priorities. In the recommendation segment, specific proposals will be offered to attack problems of highest priority, taking into account the unique situation in Arizona, e.g.-finances, school organization, legal restrictions, and others.

Professional Education Segment

As indicated in Section IV, this instrument was administered to ten categories of individuals related closely to professional education in background, training, and experience. There were approximately 1100 responses which were tabulated and interpreted. Some did not respond to all of the top five items in their judgment, as directed. However, the responses, in general, appeared to be the product of thoughtful and sincere efforts.

This group of needs is presented as a list in decreasing order of mean rating value, and it includes tabulation of write-in needs not listed in the instrument. The list follows:

1. Goals 3.79*

More specific emphasis and improvement on language skills, mathematical skills, social skills, and values development.

2. Objectives 3.75

The re-writing of objectives in behaviorally stated terms with criterion-referenced measuring items.

3. Proficient Staff 3.69

Improved in-service training, better pre service training to cope with modern problems and better utilization of special skills which each teacher has.

4. Contemporary Curriculum 3.08

Geared to modern needs socially, emotionally and aesthetically; related closely to area needs such as inner-city, rural, urban, and others.

5. Adequate Materials and Equipment 3.01

Improved textbooks and materials; extended use of educational technology and instructional materials centers.

6. Increased Cooperation Between School and Community 2.97

Specific provision for inter-play of special and unique resources, and for full communication and mutual assistance.

7. Early Childhood Education 2.96

Specific provision for more resources for kindergartens, nursery schools, and for grades 1-3.

8. Accountability 2.88

Systematic product and process analysis; fixing responsibility; curriculum evaluation; cost analysis.

9. Vocational Training 2.86

Belief in dignity of work; preparation to enter the work world.

10. Student Centered Instruction 2.86

Minimal uniform requirements; flexibility in program development and methodology to achieve goals.

11. School-Community Coordination 2.75

Coordination with referral services and public service agencies; agencies to inventory needed services for youth.

12. Special Services 2.62

Greater emphasis on counseling, health, psychological and mental hygiene services.

13. Delimitation of School Responsibilities 2.49

More emphasis on essential skills, problem solving abilities with curtailment of peripheral services.

14. Leadership Resources 2.43

Utilizing consultants, professional organizations, university bureaus and others to maximum degree.

15. Effective Teaching of Language Skills 2.41

Maximum development of total communication arts for every child.

16. Early Identification of the Handi- or Exceptional Child 2.41

Maximum utilization of special services to meet his needs.

17. Assessment of Product of Education 2.39

Tie-in with statewide, regional, or national programs of educational assessment to see how product rates on national norms.

(*These values are established by tabulating the number of checks in 1st, 2nd, 3rd, 4th, or 5th choice of rank of importance. By ascribing a value of 5 to each 1st choice,

4 to each 2nd choice, etc., and dividing by the total number of checks, a mean value was developed.)

Lay Citizenry Segment

As indicated in Section IV, this instrument was administered to eleven categories of lay citizenry (not directly professionally education oriented). There were approximately 1,000 responses which were tabulated and interpreted. There was much greater incidence of write-in individual choices than in the professional educational group and a somewhat greater tendency to give vent to obvious gripes and discontent. However, the responses, on the whole, appeared to represent a sincere effort to "tell their story", and it was more difficult to combine "like responses" as they were often stated differently. This group of needs, as with the previous case, is presented as a list in decreasing order of mean value, and it includes tabulation of write-in needs as encouraged by the instrument. The list follows:

1. More Competent Teachers 3.91

   Improved preservice and in-service training; better use of individual skills.

2. More Effective Teaching of Language Skills 3.60

3. More Vocational Preparation 3.58

   More emphasis on training for a job and a place in the world of work.

4. Better Discipline 3.20

   Responsible behavior on campus at all levels and by all age groups.

5. Better Use of Facilities 3.18

Longer days, longer terms, more concentrated use during the day and evening.

6. Teaching Problem Solving 3.03

Use of better techniques and methods to solve personal and other types of problems.

7. More Individualized Instruction 2.96

Flexibility in program of study and in requirements and methods.

8. Construction of Better School Buildings 2.92

Safer, more efficient buildings, better cooling, lighting and ventilation with special design for special types of instruction.

9. More Emphasis on 3 R's 2.88

Back to basic fundamentals for all children.

10. More Cooperation Among School, Home and Community 2.86

Greater spirit of working together on all fronts.

11. Provisions for Kindergartens 2.84

Putting kindergartens on tax base of operation for all public schools.

12. Better use of Educational Technology 2.74

Greater use in the newest of educational hardware to assist learning.

13. Tuning in to Current Social Needs 2.73

More emphasis on social needs which should be met in Arizona.

14. Greater Provision for Special Needs of Handicapped Children 2.70

More emphasis on special techniques to help these children.

15. Better Education Managment 2.67

Getting more good out of each educational dollar

16. Better Administration 2.40

Permit creativity and provide opportunity to try new ideas by teachers; administration by encouragement.

17. More Specialized Education for Minority Groups 2.39

Specialized planning for sub-cultures.

Special Interview Segment

As sort of a follow-up technique, interviews were held with educators, administrators, teachers, other citizenry, including pupils, graduate students, and people from all walks of life. This was conducted at approximately the three per cent level of those administered the instruments. This was not designed as a scientific approach, but rather, to see what would happen that might be helpful. The same approach was used as is currently used by a prominent national poll group (the coordinator at one time was a trained interviewer for this national poll).

The top 17 needs registered by this group follow:

1. Total curriculum reorganization to gear in to needs of younger generations.

2. Development of new objectives of learning based on needs of youth--stated in behavioral terms.

3. More realistically trained teachers to cope with modern educational problems.

4. Better physical plants designed to provide atmosphere conducive to modern learning.

5. Better provision for modern materials and equipment, utilizing the best in modern technology.

6. Greater team approach between school and community.

7. Provision for tax-supported kindergartens.

8. More emphasis on communication skills.

9. Better control of behavior (discipline) throughout the school day.

10. Much greater emphasis on preparing for a specific vocation.

11. Early identification of handicapped child, with special services to meet his needs.

12. More emphasis on fundamental skills (3 R's)

13. More specialized educational opportunity for central city youth.

14. More specialized educational experiences for rural minority groups.

15. More parent instruction, so parents can assist the child while at home.

16. Much better counseling facilities both at elementary and secondary schools.

17. More emphasis on sportsmanship in sports; decreased emphasis on competitive athletics.

Special Reaction Groups

These groups included members of the advisory councils, special consultants, specialists in assessing educational needs, and educational scholars visited in various states. Some from these had participated by responding to one or both of the instruments utilized in the data gathering process. This was conducted as an interview with individuals, one at a time. Care was taken not to suggest needs or identify needs developed from other sources. Rather, in the course of the dialogue on crucial educational needs in Arizona, the

needs which were emphasized were recorded for later scrutiny. Then the needs which were stressed most often were arranged in a list of decreasing order of cruciality as indicated by the discussions. This list follows:

1. Complete revision of the curriculum for language skills, mathematics skills, and social skills via selection of behaviorally stated objectives.
2. Better trained teachers to meet the new school and learning situations which they face.
3. Revised content in all fields of subject matter to make them more relevant to today's problems in living.
4. Better materials for instruction in all fields and at all levels.
5. More provision for early childhood education, especially for kindergartens.
6. More provision for training for saleable skills in the world of work.
7. Greater emphasis on school-community cooperation in all facets of the educational program.
8. More provision for "total-field" counseling services.
9. Greater provision for health services, including undergirding psychological services, mental health services, and physical health training, with special emphasis on availability of effective referral services.
10. Greater emphasis on problem solving experiences, using scientific method, scientific attitudes and high levels of thinking abilities.

State Department of Education Sources

The State Department of Education is the chief education agency of the State of Arizona and is the center for leadership, for planning and for execution of plans for education. For purposes of this study, three

broad areas were investigated for whatever pertinence their activities might have in the general picture of assessment. The three areas were:

Education, Vocational Education, and Vocational Rehabilitation

Three specific questions were posed, along with other related matters for discussion. The three questions were:

1. What kinds of information (hard or soft data) does your office (or division) collate or compile relative to educational need - in all three domains? (How much of this, if any, is computerized?)

2. What plans do you have for the future in this respect?

3. What are the crucial educational needs, as you see them from your vantage point, for Arizona.

It was assured that all discussions or responses would be kept impersonal, if there were any inclusion of them in this report.

In the Education Division (elementary and secondary) some important points were listed as backdrop. The only data regularly collected at this time are those required by statute. However, some data, additionally, are gathered for specific attacks on problems when services are requested by a school district or group of schools within a county.

There are specific plans to extend data collection and processing, via use of the computer, to help develop services that have not been available previously to schools. This will include much information about the learner, a summary of the materials being used in the school, and some evaluation of areas needing improvement. (this latter on request of district only)

There is heavy activity in the Education Division in re-designing curriculum guides, inasmuch as these are now the official state courses of study. The major thrust will be to re-develop the curriculum guides in all fields of subject matter with

inclusion of four major ingredients -- concepts, methodologies, activities, and resources. This curriculum revision is a hoped-for-by-product of new curriculum guides. The guides will be more flexible to meet differing needs. The approach in development of the guides is expected to be via special task forces in each area of content. There are no means of collecting the masses of hard data needed at the state level at present. Local districts either do not have the hard data or do not transmit them to the SDE to any appreciable extent. Perhaps another task force will be needed to spell out ways and means of bridging this gap.

On the Vocational Education side of the ledger, there is abundant collection of data to be used in program planning. There is a full print out regularly on enrollments, information needed to develop grants-in-aid to districts, job opportunities and a motley array of other important data. This is an extraordinarily complex but efficient system. However, the hard data are helpful primarily in determining the nature and content of vocational education classes, and when and where they should be offered. A summary of this total operation would indicate that all data needed for decision making and program planning are collated, analyzed and used.

The educational needs of Arizona were tabulated as indicated in discussions with several SDE high echelon employees. These people have their fingers on the educational pulse of the state and have distilled off high level considered judgment, even though they may not have back-up hard data to support their premises. Even so, in the realm of opinion, their contributions

must be considered as of major importance, and these constitute a significant group of needs which should be taken into account.

The list of educational needs generated from SDE officials follows:

1. Total curriculum revision with emphasis on behaviorally stated objectives.

2. Greater provision for high quality learning materials at all levels.

3. Greater provision for extended counseling services at all levels.

4. More emphasis on general education (that education profitable for all youth which is relevant to requirements for living the good life today).

5. Greater provision for the special needs of sub-cultures, inner-city children and handicapped children.

6. Better communication and involvement between the parents and the schools.

7. Better accountability for education, including all phases of management, program planning and evaluation.

8. A revised and re-written body of education statutes in tune with present educational circumstances.

9. Greater provision for equipping all youth with a saleable skill in the world of work.

10. Greater provision for early identification and treatment of handicapped children.

11. Greater emphasis on early childhood education, especially on kindergartens with a tax-supported basis.

12. Greater emphasis on a quality of teacher preparation especially well-suited to equip teachers to cope with problems of the modern school.

13. Better in-service training for teachers, especially in outlying areas, with increased use of specialists and consultants (as a joint venture between SDE, the universities, and the local districts).

14. Plans for school district reorganization to provide equitably for all students in the State of Arizona.

15. Reorganization of the SDE with an appointed state superintendent of public instruction.

16. Greater emphasis on developing problem solving capabilities among all pupils, using the highest level of thinking the pupil can achieve.

17. Greater provision for total health services including education about drug abuse, use of alcohol, and use of tobacco.

Educational Needs Identified by Other States

Many other states have done a commendable job of assessing their educational needs. Some educators think that there is great similarity of educational needs among many of the states. However, most readily agree that many crucial needs are unique to a specific state. Irrespective of this, a brief overview was made of the educational needs identified in states believed to have similar problems to those in Arizona.

Those which appeared in several state lists and which were apparently pertinent for consideration in Arizona follow: (Edited to make like statements fall under one generally stated item.)

1. Provision for a totally revised curriculum with emphasis on selecting and measuring outcomes of teaching for behaviorally stated objectives.

2. Provision for an evaluation of the curriculum in terms of its total effectiveness.

3. Provision for comprehensive counseling services at all levels.

4. Provision for greater uniformity, state-wide, for scope and quality of educational opportunity for each pupil.

5. Provision for an individualized curriculum with flexible requirements, individualized instruction and computer assisted instruction.

6. Provision for development of a saleable skill in a respected world of work.

7. Provision for maximum utilization of outstanding instructional materials.

8. Provision for specialized education for handicapped and disadvantaged learners. (early identification and remediation procedures)

9. Provision for more adequate teacher preparation for instructional excellence in modern schools. (to cope with the problems creatively)

10. Provision for major improvements in teaching communication skills, especially reading.

11. Provision for greater relevancy of the total content of subject matter to the needs of today's pupils.

12. Provision for a master plan for education of all youth.

13. Provision for collating and analyzing (via statistical treatment) of data beneficial to the total operation of the schools.

14. Provision for specialized education to help prevent drop-out, drug abuse and alienated youth.

15. Provision for better relationships between colleges of the state and the public schools--sharing, cooperating, and helping one another.

Educational Needs Identified from Stage I

In the Stage I study of 1969, there was tabulated a list of critical educational needs by county and for non-public schools. By ascribing arithmetic values based on ranking of items by county, it is possible to arrange the list of needs in a decreasing order of priority. This, however, is relatively unimportant, inasmuch as all of the needs are crucial. Much more important is the breakdown and interpretation of each crucial need. This report of needs is included in Appendix K. It provides much food for thought and is a good starting point in identifying crucial educational needs for Arizona. A list of needs abstracted from the 1969 study follows:

1. Need for curricula and programs that meet the needs of young people who have widely varying experiences, physical and mental abilities, and interests.

2. Need for improved buildings and facilities.

3. Need for comprehensive procedures for teaching personal attitudes and social values.

4. Need for vocational education and vocational guidance programs.

5. Need for compensatory education programs for disadvantaged children.

6. Need for instructional materials and equipment.

7. Need for change of emphasis in the objectives and programs of public education.

8. Need for pupil services such as guidance and counseling, health services, social work, and psychological services.

9. Need for communications between school and community.

10. Need for improved preservice and in-service education (of teachers).

Needs Developed from Other Sources

There are many other sources which have identified critical educational needs in Arizona. Perhaps some of these used less sophisticated means and have less back-up data than others, but it is suggested that their findings are worth viewing. Moreover, there is a tendency to be "mixing apples with lemons" in some of these lists. Irrespective of this, the reports from four other sources are offered to stimulate thinking, to compare with other lists, and perhaps to add to any consistency of needs identified from other sources.

Designing education for the future. Earlier in this report, reference was made to the eight state project

labeled, Designing Education for the Future. This group published a great deal of material and devoted one major phase of its activity toward identifying Arizona's critical educational needs. In a report published January 15, 1968, there were recommendations for meeting the following needs which had been synthesized from earlier activities:

1. Need for the State Superintendent of Public Instruction to be appointed by the State Board of Education.
2. Need for an Arizona Educational Planning and Coordinating Council to be established by the legislature.
3. Need for a thorough analysis and revision of Title XV, Education, Arizona Revised Statutes.
4. Need to spell out definitively the duties and responsibilities of the State Board of Education.
5. Need to re-organize the office of the Superintendent of Public Instruction (responsibilities and functions).
6. Need to develop a comprehensive program of school district reorganization.
7. Need to develop an exemplary school for a prototype of things to come (model or pilot installation).
8. Need to encourage district school boards to maximize educational opportunity by every available resource and technique.
9. Need to provide enlightened teacher education programs, utilizing new techniques and ideas for improvement.
10. Need for school districts to identify the proper role for administrators, teachers, specialists and all other school personnel.
11. Need to maximize use of instructional materials and to establish systems of evaluation.
12. Need to set the stage so that each student has the right to be understood by the school, to have a program which best fits his individual needs, and to have the school seek solutions to the problems he or she encounters.

Assessment of the educational needs of Indian students. In December, 1969, an important study on educational needs of Indian students was completed. Among the more significant findings (of

needs) of this report are the following:

1. There is a need to establish educator-learner relationships promoting further understanding, respect and communication between students and educators.

2. There is a need for the personnel involved in educational administration to provide the processes by which educational goals are defined and resources coordinated to achieve the goals.

3. There is a need for building the self-image of the Indian student to provide the student with a sense of dignity and pride to foster self-esteem and a sense of identity, encouraging self-confidence and a willingness to compete.

4. There is a need to develop student involvement, encouraging student interest and participation in the learning process, providing experiences of responsibility and authority, and participation in decisions concerning their education.

5. There is a need to promote community involvement and to encourage the participation of the community in the educational system for the purpose of defining and achieving educational goals.

6. There is a need to reorganize curriculum structures in conjunction with re-examining the content of subject matter taught in schools.

From another perspective, it can be stated that there is need for the educational system to allow a student to:

1. Understand himself and appreciate his dignity as an individual and his identity as a member of society.

2. Understand and appreciate different social, cultural, and ethnic groups as well as his own.

3. Achieve basic skills in the use of words and numbers.

4. Obtain a positive attitude towards the learning process.

5. Learn the responsibilities and priviliges of citizenship.

6. Learn good physical health habits.

7. Recognize the opportunity to be creative and follow his own interests.

8. Understand and appreciate accomplishments in the arts and sciences.

9. Be able to adjust to the rapidly changing world of the future.

All of these salient points are discussed in the report. The goals, problems, and needs are well-stated, and any group assessing Arizona's educational needs would do well to make an intensive study of this document.

Assessment of needs by superintendents and principals. Very few school administrators have adequate hard data to back up their assumptions, but nearly all of them have well-developed and thoughtful perception about the items which should be included in a needs assessment list. Discussions were held with approximately twenty school administrators, many of whom would later participate in filling out the Stage II instrument mailed to them. There was quite general concensus on the following needs and some felt they had sufficient hard data to substantiate their conclusions:

1. Need for better prepared school personnel, trained to deal effectively with the strategic and unique requirements of the modern classroom.

2. Need for much greater in-depth means of planning and evaluating the total school system.

3. Need for complete curriculum revision to enhance relevance to 1970 living conditions.

4. Need to re-state the objectivies of instruction in behavioral terms, with means of measuring realization of them by the pupils.

5. Need for accent on individualized instruction with provision for flexible graduation requirements and flexible patterns for programs of study.

6. Need for coordinating all resources and referral services to maximize educational efficiency of the total school operation.

7. Need for extensive improvement in school-community relations with maximum interchange, involvement and participation by both elements.

8. Need for specialized educational opportunities for the gifted, the handicapped, and the disinterested.

9. Need for accent on vocational education to prepare all youth for his or her part in the work world.

10. Need for specialized programs to combat drop-out, drug abuse, use of alcohol and the use of tobacco by pupils enrolled in school.

11. Need for more extensive use of teacher aides, para-professionals and other professional or semi-professional assistants.

12. Need for capitalizing on newer movements in educational methodology which have been tried in recent years. (examples: differentiated staffing, modular or flexible scheduling, team teaching, non-verbal communication, interaction analysis, programmed instruction, computer assisted instruction, information retrieval systems, and others in the current picture.)

13. Need for extensive remedial programs in social studies, communication arts, mathematics and science.

14. Need for greatly increased psychological services.

15. Need for greatly expanded counseling services at all levels.

School surveys. During the past few years, it has been quite popular to have school surveys conducted to assist school boards in meeting their responsibilities. Typically, the survey is conducted via a contract between the school board and a consultant group or university bureau of educational research. There are usually two major segments in a survey: (1) a description of the school system as it exists (the surveyors describe what they find) and (2) a list of recommendations to improve or to meet needs which were discovered after an assessment of the educational picture.

An examination of 23 school surveys completed in Arizona within the past decade reveals a rather consistent pattern of need among schools surveyed. The following needs, interpreted from the recommendations (often based on test data), are representative of the most frequent ones listed: (Some members of the Advisory Council to Title III thought the results of surveys would be especially pertinent for this study.)

1. Need for remedial programs in all of the basic subject matter fields.
2. Need for curriculum revision to bring content more in line with the current problems of day-to-day living.
3. Need to re-state objectives in all subject fields in more nearly behavioral terms.
4. Need for greatly expanded psychological services.
5. Need for greatly expanded counseling services at all levels.
6. Need for teachers' aides and assistants to permit teachers to concentrate on high level tasks of instruction.
7. Need for greatly expanded health services.
8. Need for greatly expanded instructional materials centers and use of the latest in educational technology.
9. Need for a greatly expanded in-service training program.
10. Need for improved school-community relationships (including the community-centered school).
11. Need for increased usage of newer instructional methodologies.
12. Need for internal research and evaluation services to take stock of educational achievement and of promising practices elsewhere.
13. Need for greatly expanded vocational education programs.
14. Need for greatly expanded but pertinent programs for minority groups.
15. Need to concentrate on learner needs, including social skills.

16. Need to re-cast the program for proper emphasis on general needs, development of good attitudes, and establishment of value systems.

17. Need to identify youth with handicaps or who have been disadvantaged, with special programs to meet their needs.

SECTION VI. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

A major project of assessing educational needs of Arizona was undertaken in the late summer of 1969. Every known activity related to a general needs assessment was reviewed for pertinence in this project.

A preliminary working model containing 44 steps or items of activity was developed. The intent was to go through as many of these steps as resources permitted in an effort to develop a proposed model for use in Arizona in the next year, or for several years. Intensive activity was directed toward most of the 44 items, and a new model was constructed after considering the strengths and weaknesses of several trial models.

As a major part of the total activity, attempts were made to identify the most crucial or critical educational needs in Arizona via the soft data approach. Through dialogue, opinionnaires, interviews, discussions and assay of other projects, several lists of crucial needs were developed. A wide array of individuals was involved in the total information gathering process. This included consultants, advisory council members, educators, adult citizenry and students.

A huge investment of time and effort was made in weighing, judging and deciding (deliberative approach) about the importance and usefulness of information developed in the study. This

was directed heavily toward attempts to ascertain the degree of cruciality or criticality. Several assumptions were developed which served as guidelines or as limitations in the total procedure. Instruments were designed which had the posture of soft data approach and which were limited to a low degree of statistical sophistication. No attempt was made to defend these as a scientific approach. Rather, it was decided to try this as a pilot study to see what could develop in terms of useful information. The consultants and the members of the advisory councils were especially productive in all of the activities alluded to in this paragraph.

As a general summary, the following were accomplished:

1. A working model, proposed for Stage III, was developed.

2. A list of critical educational needs of Arizona was distilled out of many inherent in the total picture, with back-up information from pilot studies to defend partially their criticality.

3. Several useful items, such as a comprehensive reference list (bibliography) were developed for future use.

4. A list of needed projects, designed to help meet some of the critical needs was developed (to help Arizona catch up in meeting the needs).

5. Several lists of needs from different perspectives or sources were constructed which might serve as a useful frame of reference in planning for the education of Arizona's youth in the next decade.

6. Several limitations were identified along the way which should serve a useful purpose in any future projects to assess educational needs.

7. An extensive list of conclusions was developed from the information at hand in this project.

8. A list of recommendations was developed growing out of information and data collected in this project.

9. All requirements and terms of the agreement, as interpreted by the team, were carried out to completion and, in many instances, activities went a considerable distance beyond the terms of the agreement (contract).

Conclusions

Several conclusions appear defensible in the light of data and findings in this study:

1. A viable, adjustable useful model can be produced which should be useful in assessing Arizona's educational needs.

2. The educational needs of Arizona are multitudinous and are overwhelming in nature.

3. Arizona is far behind many other states in attacking critical educational needs.

4. The educational needs identified for Arizona bear strong resemblance to critical needs identified in several other western states.

5. Projects of this sort can serve a useful purpose in helping Arizona re-direct efforts toward meeting some of the more crucial educational needs. Attention is thus focused on needs which should stimulate the educational leadership and the legislature to attack more vigorously the most critical needs.

6. Needs assessment projects should be an on-going continuous effort, and new ways to gather data, involving hard and soft approaches, should be built into the projects.

7. The degree of criticality or cruciality many be debatable and may vary from year to year, but there are sufficient back-up data to justify an all-out effort on as many as resources will permit.

8. It is probable that other critical needs exist which were not identified in this project, or that new ones of great intensity may emerge in the near future when more facts are in.

9. In any needs assessment, it is highly important to involve and to assimilate the thinking of a large segment of the total population of Arizona, a motley array of citizenry and of professional educators, with very heavy emphasis on student reaction and attitude.

10. There are many ways to gather data for needs assessment projects. A wide variety of approaches should be used during the next few years.

11. There are great and overwhelming educational needs in Arizona in all three domains, and any attack on the needs should be directed toward some needs in each of the three. This is to say that Arizona cannot afford to restrict her efforts to one domain at the expense of the other two.

12. From this type of project, wherein many critical needs become apparent, there was more flow of information to reaffirm previously recognized needs than to identify new ones.

13. The proposed model and plans for Stage III have the endorsement from key educators in Arizona, from consultants, from the advisory councils, and from many others interested in state assessment of educational needs.

Recommendations

A total list of recommendations could be virtually unending, inasmuch as the needs are so great. However, an effort was made in this portion of the report to group many related recommendations together and to combine similar ones as more specific recommendations. All of the activities, including discussions with consultants, advisory council members, educators, and others were put through a distillation-synthesis phase. The information from pilot studies was used as back-up material. The product from this is offered as a basis for a series of recommendations, from the total input, as of this point in time.

I. It is recommended that Stage III of needs assessment be formally identified and that a plan of action for Stage III be adopted.

II. It is recommended that the model developed for Stage III be accepted for implementation, and that it be activated at the earliest possible date.

III. It is recommended that the following critical educational needs, synthesized from information and data developed in this project, but with emphasis on what was derived from the instruments, be accepted as the most critical needs at this time, and, further, that every possible resource available be directed towards meeting these needs during Stage III:

1. There is needed a complete curriculum reorganization for improvement of content, especially in communication skills, mathematical skills, social skills and values development.

2. There is needed a total re-writing of objectives of instruction (including selection from and modification from commercially available lists) in behaviorally stated terms with criterion-referenced measuring devices for degree of realization.

3. There is needed a meaningful revision of teacher preparation to prepare teachers realistically for the modern classroom and modern student, with more adequate in-service training along the way.

4. There is need for much greater emphasis on vocational training to prepare each pupil with saleable skills to enter gracefully the work world.

5. There is need for more adequate materials and equipment, utilizing the best in instructional materials centers and in educational technology.

6. There is a need for much improved school-community cooperation, as a joint educational enterprise.

7. There is need for greater emphasis on early childhood education, especially with tax-supported kindergartens.

8. There is need for more student-centered instruction, individually prescribed, with greater flexibility in requirements and for more extensive use of newer methodology.

9. There is need for greatly expanded counseling and psychological services at all levels.

10. There is need for better discipline, characterized by responsible behavior at all levels.

11. There is need for better total use of facilities, both in heavier community use, and in capitalization on unique uses which the facilities can provide.

12. There is need for more specialized education for sub-cultures, for handicapped, and for other exceptional youth.

13. There is need for greater emphasis on development of problem-solving abilities, utilizing the highest levels of efficient thinking.

14. There is need for provision for greater uniformity, state-wide, for the scope and quality of educational opportunity for each student.

15. There is need for better assessment of the product of education, cooperating with all pertinent agencies, relative to how well the educational operation is doing.

It is recommended concurrently that the total list of different needs, identified from the several sources, be tabulated to provide a working list for consideration by any group interested in planning ways and means of meeting one or more of the needs. This might result in healthy dialogue about obvious needs which would be missing on such a list, or challenging the inclusion of some of the needs on the list. The more discussion that can be stimulated, the more cognizant Arizona citizens will be about their educational problems. And, perhaps, the more insistent will be the need for back-up hard data to validate the need.

IV. It is recommended that the following special projects be studied by the State Advisory Council to [illegible]le III, and that they negotiate an agreement or contract to carry out as many of these as are feasible at the earliest possible date: (some are similar in portent to others).

1. To direct a task force in a "think tank" approach to assay the very latest developments in teacher preparation, and to work with the three universities in improving teacher education in Arizona.

2. To direct a task force to advise and assist the State Department of Education on how to mount programs which will help meet critical educational needs in Arizona.

3. To direct a task force to start planning Stages IV and V and to delineate which kinds of activities should be done via contract with outside consultants or agencies, which ones with the State universities, which ones with professional membership groups, and which ones by the State Department of Education. Much can be gained in this attack by cross-referencing with five to ten other states which have achieved outstanding success in meeting educational needs in their respective areas.

4. To direct a task force to study feasibility of six major steps:

   a. joining the Educational Commission of States via legislative action

   b. joining the "Popham Project" in a major participatory manner

   c. contracting for services in writing amendments to the state plan, for dissemination, for evaluation of project success, and for predictions of potential in funding proposals

   d. assaying the values from joining with the High School Visitor's Office and the State Research Coordination Office in future needs assessment activities

   e. coordinating efforts with major groups interested in needs assessment, including NCATE, AACTE, and ERIC (teacher education)

   f. joining a consortium of states in a major cooperative attack on needs assessment and related problems

5. To direct a task force to prepare special instruments to derive a defensible picture on educational needs of Arizona via opinionnaire, including consideration of validity and reliability of the instruments.

6. To direct a task force to develop strategies to cooperate with any state-wide or regional assessment programs, and especially with any State Department of Education programs of assessment.

7. To direct a task force to develop strategies for active participation with and eliciting assistance and responsibility for needs assessment projects from all active professional membership associations in Arizona.

8. To direct a task force to develop strategies for involving local districts, the State Department of Education and the universities in workshops utilizing high visibility consultants for attacks on problems of needs assessment.

9. To direct a task force to coordinate activities and offer assistance to local districts in their attempts to develop testing programs of high stature.

10. To direct a task force to take stock of what has gone before, and to develop a creative and comprehensive plan for the identification of educational needs in Arizona, including the status of education K-12, and achievement in the Seven Cardinal Principles of Education. Questions should be asked about the relevance of educational programs for all sub-populations in Arizona and about the total effectiveness. The end product would be identification of critical needs for education in Arizona. An excellent model for this sort of activity is found in the "Plan for Study of Educational Needs of Florida" which could be adapted to Arizona.

11. To direct a task force to identify the educational concerns of citizenry, professional educators, business and civic leaders, leadership in State Department of Education and students in schools at all levels. Assuming that this list of concerns might run in the range of 200-500, the task force would then categorize them into 20-25 broad categories. From the total list of concerns, a list of 50-60 most urgent concerns would be designated as the critical educational needs of Arizona. Excellent work along these lines has been done in Utah, and their effort could serve well as a frame of reference.

V.

12. To direct a task force to develop a questionnaire on the educational needs and construct a plan for its use in the state as well as for the treatment of the data. The design used in Tennessee is especially appropriate as a guideline or frame of reference. (a continuation effort built upon past efforts).

13. To direct a task force to assay what has been accomplished in other states (from information in the public domain) and develop a plan to meet the most critical needs of Arizona (assuming that the needs in Arizona are, in general, close to the needs of some other states).

14. To contract, with an outside consultant agency to develop a plan of action for meeting the most critical needs as they exist in the thinking of the general citizenry and professional educators.

15. To direct a task force to draw up a long range assessment of need program, distilling the better practices utilized in the nation and applying them to Arizona.

V. It is recommended that the following special project be set in motion via contract with a university bureau as soon as possible:

To conduct 18 special workshops for teachers and administrators designed to assist them in selecting or preparing suitable instructional objectives stated in behavioral terms; to help teachers prepare criterion-referenced items on instruments which will measure outcomes from the objectives selected.

VI. It is recommended that the State Department of Education identify the two or three most pressing problems facing education in Arizona, and then bring in consultant help to plan, to develop lay-out and design for attack on problems, and then to train people in Arizona, preferably within the State Department of Education, to to the work, (after obtaining hard data to back up the criticality of each need or problem to be attacked).